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AUTHOR Mahan, James M.; Lacefield, Warren E.
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ABSTRACT

The purpose of the two studies reported in this paper are (1) to extend knowledge about the effects of longer field experience with multiple role models (supervising teachers) upon student teachers' value orientations toward education and schooling; and (2) to document the effects that the student teaching experiences have upon the educational value orientations of these preservice teachers. Cognitive dissonance theory provides a conceptual model that allows formal discussion of attitude change effects in the student teaching situation. If a perceived disparity exists between the student and the teacher, the student will tend to adjust his value orientation in such a way as to minimize that disparity. The extent of this adaptive shift is expected to be a function of the duration of the situation. Empirical evidence presented in this report validates the predictability and general usefulness of the dissonance model. One study took place during the 1974-75 academic year. Fifty-four student teachers taught daily, on two grade levels under two classroom teachers, and observed in the rooms of other teachers. Methods instruction was provided at the cluster schools. The cluster arrangement and diverse observational and instructional activities permitted the student to become well acquainted with many teachers in the three schools. The value orientations toward education held by the student teachers were determined three times during the program by administering the Educational Preference Scale (EPS). The EPS instrument has been shown to discriminate accurately between groups of persons known to hold different opinions about the nature of education. During the 1973-74 year, a similar study was conducted with the same group of supervising teachers and different student teachers. (HM)

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Student Teacher Educational Attitude Changes In Year-Long Placements Examined From a Cognitive Dissonance Framework

JAMES M. MAHAN
WARREN E. LACEFIELD

division of teacher education
323 education building
indiana university
bloomington, indiana 47401

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Introduction

Much has been published and discussed about the tendency of student teachers to adopt the values and attitudes toward education modeled for them by their supervising teachers during student teaching experiences (often the first encounters with "real life" teaching situations). Previous research tends to be based upon six- to sixteen-week student teaching assignments usually involving the student teacher with one classroom, one school, and one supervising teacher. However, many programs in operation today involve the student with a cluster of teachers, classrooms, and, sometimes, schools. In these cluster programs, a student may simultaneously be supervised by several teachers for varying lengths of time and thus be exposed to a wider variety of teaching styles, situations, and role models.

The influence of multiple supervising teachers (perhaps in different schools) and longer student teaching placements (an academic year or more) upon the educational attitudes and values of student teachers and the satisfactions they derive from such field experiences has not been extensively documented. Few year-long student teaching programs exist in the nation to undergird such an examination. Oestreich (1974) makes the point, for instance, that the length of student teaching experience is itself a neglected variable that merits research attention.

The purpose of the two studies reported in this paper is to extend knowledge about the effects of longer field experience with multiple role-models (supervising teachers) upon student teachers' value orientations toward education and schooling. Persons who are involved with the reshaping of conventional student teaching programs or with the development of longer, more innovative field experiences need to be concerned with the following kinds of questions:

1. How do student attitudes about education change as a function of the length of the field experience?

2. If a student participates in a two-semester program and encounters a different supervising teacher each semester, what will be the probable effects of different teacher-student attitudinal configurations?

3. Is there a relationship between the supervising teachers' attitudes toward education and the degree to which student teachers perceive them to be effective role models?

4. Is there a relationship between the student's attitudes toward education before or after the field experience and the degree of satisfaction he or she gains from the experience?

JAMES M. MAHAN is *director* of Project Options for Student Teaching and *associate professor* in the School of Education, Indiana University. WARREN E. LACEFIELD is *research associate* at the Center for Learning Resources, University of Kentucky.

These and other questions are explored in the following sections of this paper.

A Conceptual Framework

Traditional-emergent, conservative-liberal, authoritarian-democratic teacher centered-learner centered, content-process, and other orientations toward values have frequently been related to the perceptions and actions of persons occupying various educational roles. There has been a continuing interest in the effects of field based experiences upon pre-service teachers completing programs in teacher preparation. Many studies have focused upon changes in student teachers' attitudes and values during the student teaching assignment. Yet Loree (1971) has expressed concern that research in this area is still limited and more concentration on changes in values is desirable.

Some Empirical Studies

Guba, Jackson, and Bidwell (1959) found that preservice teachers at a large university exhibit personality characteristics more like their fellow undergraduates than like role occupants in the profession being pursued. Cummins (1961) revealed that preservice teacher teaching orientations became more like the orientations of their professors as they progressed through a four-year teacher education program. Willower, Eidell, and Hoy (1973) cited that more experienced school-based personnel express greater traditional tendencies than professional educators with less experience. Spindler (1955) has pointed out that people can be hypothesized to occupy different positions on a traditional-emergent values continuum. The evidence strongly supports assumptions that most groups of student teachers will be more "liberal" in initial educational orientations than the supervising teachers under whom they are placed.

Pre-service teachers generally claim that the student teaching experience is the apex of their preparation program; most experienced teacher educators agree. Steeves (1952) and Milner (1959) discussed the critical influence of supervising teachers on the preservice preparation of teachers. Price (1961), Holemon (1963), and Stoller (1964) reported student teacher attitude scores and/or actions tend to shift in the direction of supervising teacher positions.

Yee (1969) found in a pre- and post-situation that most student teachers experience a change in their attitudes toward those of their supervising teachers. Roberts (1969) concluded that student teachers adjust to the constraints of field placement site socialization by making changes in their expressed orientations toward more traditional viewpoints. Roberts also found that student teachers who did not exhibit increased restrictive orientations were significantly more traditional before they reported to the student teaching placement. Walberg (1970) made observations similar to Robert's to the effect that institutional expectations for beginner role incumbents create internal conflicts. These conflicts can be resolved by a personal socialization process in the direction of the institutional expectations.

Murad (1974) reported that student teachers undergo a change toward more traditional orientations, noted that all significant changes were in the direction of a more conservative stance on the change variable, and

found graduating student teachers to be the most conservative group when compared to other education majors in earlier stages of the teacher preparation program. Murad concluded that significant changes become apparent only after the student teaching experience and appear to be a function of interacting with somewhat more conservative inservice educators.

Cognitive Dissonance Theory

Only a few selected studies were cited in the previous section. These, however, seem to illustrate rather well the same existential "facts" concerning attitudes and attitudinal change in student teaching situations that are described in many other empirical studies. The theory of cognitive dissonance formulated by Festinger (1957) provides an excellent conceptual framework from which to approach these studies.

In its essential form, the theory holds that if a person experiences prolonged cognitive dissonance, he will very likely change his attitudes in such a way as to reduce that dissonance. An attitude can be defined as a predisposition to act in certain general ways. Cognitive dissonance is an "uncomfortable" state of being arising when a person is aware that he is behaving in a manner disparate with his own attitudes, with his own self image. It is a form of existential guilt. Assuming he cannot change the situation, the person will change his attitudes to reduce the dissonance.

The amount of attitude change which occurs is, according to the theory, a function of 1) the intensity or level of perceived dissonance and 2) the duration of the state of being. Given that cognitive dissonance is present and is of "low" or "moderate" intensity, dissonance reduction is very likely. However, if the dissonance level is high, the theory predicts that although dissonance reduction is still quite likely, the possibility of a "boomerang" effect becomes greater: that is, the dissonance may reinforce the preexisting attitude, causing little or negative attitude change rather than the predicted reduction result.

Attitude Change and Student Teaching

Cognitive dissonance theory is clearly applicable to student teaching situations. Prior to student teaching, the pre-service teacher has established value orientations toward education shaped by reading, college courses and professors, and general direct experience with learning and schooling. During student teaching, the student is placed in a situation where he or she is more or less compelled (by the expectation that he is there to "learn," if by nothing else) to observe, interpret, and role-play under the supervision of the experienced classroom teacher, the role model.

This, of course, is precisely the purpose of the student teaching experience. During this phase of the student's professional training, he is being encouraged to come to adopt the values, beliefs, and standards of excellence shared by the professional teaching community of which the supervising teacher is a member. Whether the effort is a "success" or a "failure" requires a number of value judgments to ascertain. However, cognitive dissonance theory allows the prediction of a variety of possible outcomes depending on particular situations.

The questions in the Introduction were raised concerning the effects of multiple role models and longer field experiences. The descriptive literature previously cited indicates that students as a group will tend to hold more "emergent" educational attitudes and values than will inservice teachers as a group. Dissonance theory predicts that if a disparity exists between the student and the teacher, the student's value orientation toward education will tend to shift towards those value orientations held by the teacher. The magnitude of the shift will be a function of the initial disparity between student and teacher and a function of the duration of the field experience. "Boomerangs" may occur, however, in situations where the teacher-student disparity is large.

If the student group is more "emergent" or "liberal" than are the teachers, a general shift towards more traditional value orientations is expected. If a student participates in a two-semester program and encounters a different teacher each semester, his value orientation will shift toward that of the first teacher, then toward that of the second. If the two teachers hold essentially the same orientation, the magnitude of the shift will be twice as great for a program twice as long.* The general "input-output" effect of a program involving multiple supervising teachers can be determined by examining the value orientations of those teachers with whom the student works during the entire program.

Methodology

The foregoing has provided a theoretical and an empirical framework which allows predictions to be formulated and tested concerning attitude change during student teaching experiences. The remainder of the paper reports on two empirical studies conducted to provide further verification of this conceptual approach.

The Experimental Design

The 1975 study took place during the 1974-75 academic year. Fifty-four student teachers were clustered in three elementary schools for thirty-two weeks of student teaching experience under the supervision of forty-two inservice teachers and nine university staff members. The student teachers taught daily, ultimately on two grade levels, under two classroom teachers and observed periodically in the room of other teachers. Methods instruction was provided on three half-days per week in the cluster schools. Late August to mid-December marked the initial student teaching assignment under Teacher A; early January to early May marked the second assignment under Teacher B. The cluster arrangement and diverse observational and instructional activities permitted the students to come to know the teachers in the three schools well. Participants volunteered to enter the special program on the basis of information acquired from various campus dissemination activities.

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*In general, the relationship between attitude change and disparity and duration is curvilinear. For present purposes, however, linearity will be assumed as an approximation.

The value orientations toward education held by the student teachers were determined three times during the program by administering the Educational Preference Scale (described below). This occurred (a) in late August before the student teachers reported to their supervising teachers, (b) in mid-December as they completed their assignment with their first semester teacher and (c) in early May when they had completed their second assignment with their second semester teacher.

During academic year 1973-1974, a similar study had been conducted with the same group of supervising teachers and schools and a different group of students. The only difference was that the intermediate student testing was not performed. Thus, while the 1975 study replicates the one conducted in 1974, it allows the effect of each semester and each teacher to be studied as well as the overall effect of the entire program.

Instrumentation

The Educational Preference Scale (EPS) (Lacefield and Cole, 1972) was used to measure preservice and inservice teachers' expressed value orientations toward education. This instrument was developed to examine attitudes and philosophical beliefs along four value dimensions concerning the nature of knowledge, the nature of learning and the learner, and the purpose of schooling. Using the Getzels Model (Getzels, 1963) to explain the interaction of cultural values with institutional role expectations and individual personality need dispositions, the basic and opposing pairs of value positions shown in Figure 1 were used to generate descriptions of appropriate teacher and pupil roles under each position. These, in turn, were translated into some operational statements representative of specific behaviors and settings appropriate to each set of values. Each of the 30 items comprising the instrument itself involves a 5-position Likert scale and a bipolar statement related to some operational aspect of conventional or emergent forms of education. The EPS test score represents the respondent's value orientation toward education on a scale from more traditional or conservative positions to more emergent or liberal positions. Prior to the set of items, the respondent is asked to read a short story which contains two balanced descriptions of education and school. This literary device is employed to implicitly inform the reader about the values in question and to create a mood in which he can feel he is making objective decisions for someone else rather than subjective statements about his own preference.

To date, the EPS instrument has been administered to a sample of 1,250 preservice and inservice teachers. The instrument has been shown to discriminate very well between groups of persons known to hold different opinions about the nature of education. For this sample, its internal consistency has been estimated at .874 using the split half reliability coefficient (.777) and the Spearman-Brown prophecy formula. Other estimates of reliability are the Kuder-Richardson α (.823) and the Maximum Likelihood Reliability Coefficient (.845) (Lord and Novick, 1968).

Two other instruments were employed during the 1975 study. To measure students' satisfaction with their student teaching experiences, the Purdue Student Teacher Opinionnaire (PSTO) was administered to the 1975 students after completion of student teaching in May.* To measure supervisory

*See The Teacher Education Forum, Vol. 4, No. 2.

FIGURE 1.

Opposed Value Positions Underlying Process and Conventional Educational Practise[11]

Knowledge is	- absolute and true. ↓ + tentative and arbitrary.
Learning is	- unnatural and difficult. ↓ + natural and enjoyable.
The *Learner* is	- a humble and passive recipient of knowledge and experience. ↓ + an aggressive and active seeker of knowledge and experience.
The *School* is	- the authoritative transmitter of established values and knowledge. ↓ + the setting for emergence of values and knowledge through inquiry.

11. The value positions consistent with the justifications and assumptions of process education are indicated by a plus (+) sign. The opposed and prevailing value for current educational practise is indicated by a minus (-) sign. The desired direction for change for the implementation of process education is indicated by an arrow.

From Cole, H.P. Process Education, Educational Technology Publications, Englewood Cliffs, New Jersey, 1972.

personnel effectiveness, a Most Effective Supervisor Ranking Device (MESRD), which has been in use in this cluster program for four consecutive years, was employed to rank the 42 supervising teachers according to the evaluative perceptions of all the student teachers. Each student knew all the teachers well and was asked to nominate the six teachers he or she felt to be the most effective supervisors. Teachers accumulated points based on the levels and frequencies of nomination and were then rank-ordered from LOW to HIGH according to the number of points received. These two variables are discussed in relation to student and teacher attitudes in the last section of this paper.

Analysis of the Data

The 1974 Study

In this study data were collected on three variables: each student's EPS pretest and posttest scores and his or her average supervising "teacher's" score. These scores represent respectively the student's initial value

orientation toward education prior to student teaching, the student's value orientation after 32 weeks of student teaching experience, and the average value orientation of his two supervising teachers. Three additional variables can be constructed using these original ones. Subtracting pretest scores from posttest scores yields a new variable called "attitude change." Subtracting the "average teacher" score from the student's pretest score produces a variable called "entry disparity"--a measure of the difference between the initial value orientation of the student and the average orientation of his teachers. These last two variables are of great importance for the functional relationship between them is a primary interest of this study. A third variable, not independent of the last two, but also of interest, is obtained by subtracting "average teacher" scores from posttest scores, yielding a measure called "exit disparity."

Closer attention needs to be given to the "average teacher" scores. The reason they must be used is that, during his student teaching experience, the student did work under the supervision of two teachers, who may or may not have shared similar value orientations as measured by the EPS. Unfortunately, in this study, the student was not tested in the interim between those two teachers. Since the effect of student-and-teacher attitudinal disparities over a lengthy period of personal involvement and interaction is central to the study, the average score must per force be used for the "teacher" variable.

This use may be further justified by considering the major hypothesis being tested, i.e., that during student teaching, students' educational value orientations come more closely to resemble those of their teachers than was initially the case. Since the student primarily served under one teacher at a time (an important qualification), this effect should have occurred separately and without confounding during the first 16-week experience with the first teacher and then again during the second 16-week experience with the second teacher. Since the length of "treatment" was the same in each case, the overall effect on the student should be the same as if he or she had spent the entire 32 weeks under the tutelage of a teacher whose value orientation lay midway between those of his real teachers (again assuming general linearity).

Before continuing, it must be carefully noted that each teacher generally supervised more than one student teacher at a time with a student rotation occurring during the second semester. The point is that the mean and variance of the "average teacher" scores is not the mean and variance of the teacher-sample-as-a-group (referenced further in the text). The reason for this difference is of course that many teachers were counted twice in the former figures.

A detailed summary of the results of the 1974 study is provided in Table 1. Table 1A reports the summary statistics and indicates that a highly significant ($p < .001$) group attitude change in the direction of more traditional value orientations occurred across the 32-week program. As a group, the students were initially 7.1 scale points more "emergent" than were the "average teachers" they encountered. After student teaching this disparity had reduced to 1.75 scale points--a total attitude change of -5.45.

Table 1B contrasts the student group before and after student teaching with their supervising teachers as a group. Initially, the student body was considerably more "liberal" than were their teachers as a group ($p < .0005$). The teacher sample mean of 108.6 compares to that of other groups of typical

teachers in the Mid East who have taken the EPS. On the other hand, a mean score of 117.9 (students' pretest result) indicates a rather "emergent" group posture toward educational value questions. After the student teaching experience, however, the two groups did not significantly differ ($p < .07$) in regard to their value orientations toward education.

The group results correspond to those predicted by past research reports and dissonance theory. Given an initial disparity of 7.1 scale points and 32 weeks of active involvement, an attitude change of -5.45 scale points occurred. Table 1C reports the correlation between students' initial value orientations and those of the "average teachers" to whom they were assigned was .037, indicating essentially random assignment. Table 1D and 1E present the results of two regressions performed on the data to more fully explore the functional relationship between attitude change and entry disparity. (In these and other simple regressions reported here, only the linear relationship is shown. Higher order curves were examined but a straight line provided the "best" fit in each case.)

The regression shown in Table 1D was derived from the entire group of 69 students. The standardized regression coefficient (or correlation) between attitude change and entry disparity was -.525. The regression was highly significant ($p < .0001$) and accounted for some 28 per cent of the variance in attitude change scores (100 per cent times R Squared). The scatter was reasonable considering that each variable is a construct from two other variables obtained from an attitudinal measure (measurement errors are generally large in these instruments to begin with and tend to accumulate). It should be noted that no large "boomerang" effect is apparent in this study. This is indicated by a lack of wide scatter in the first and third quadrants of the graph.

The regression shown in Table 1D can be generalized in depict the expected results of pairing any particular student enrolled in a similar student teaching program with any particular "average teacher." However, according to dissonance theory, some students (a few) can be expected to "boomerang." A regression which includes "boomerangs" would not present a true picture of the actual relationship which would describe those students who, in predominate numbers, do not boomerang.

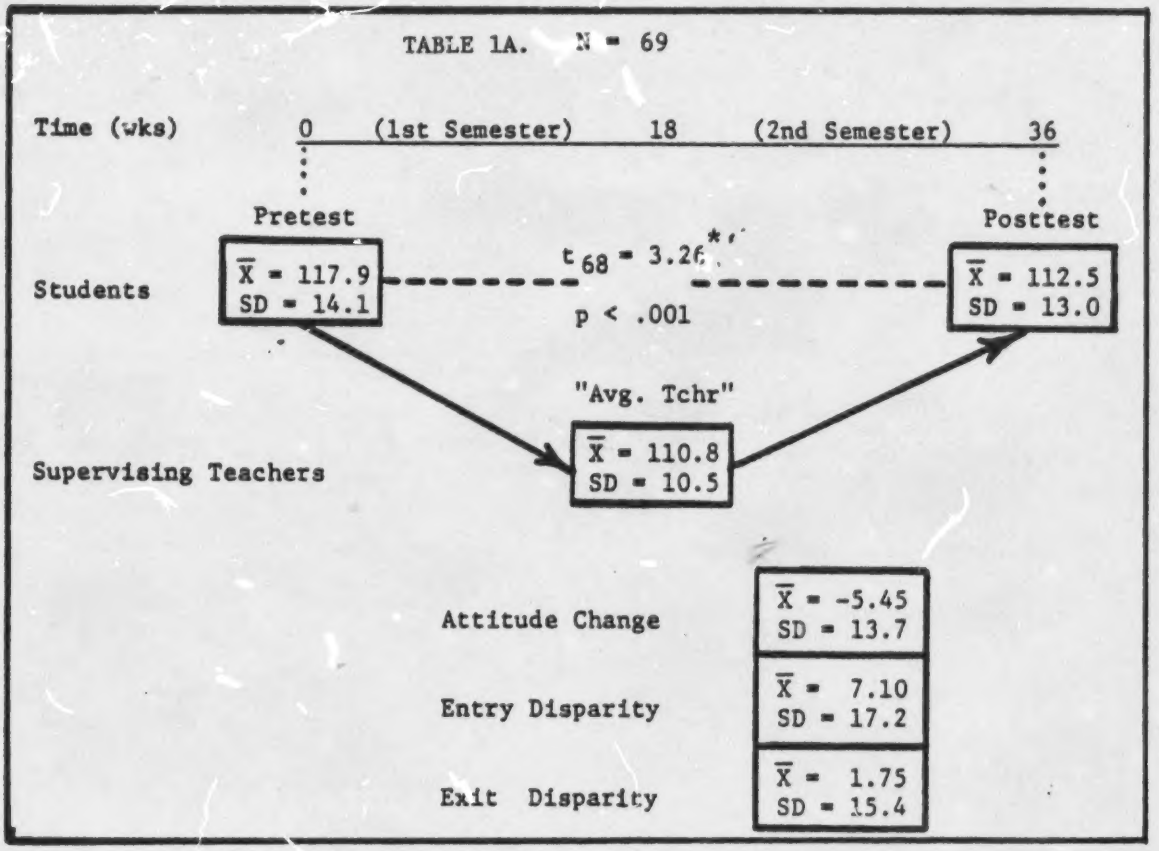
It is not easy to "predict" potential boomerangs. Presumably, a number of personality and other measures would have to be employed to describe both the student and the teacher on an *a priori* basis. Dissonance theory does, however, suggest a "necessary" condition--i.e., those students who find themselves in a situation of high cognitive dissonance may possibly boomerang; for other students boomeranging is a very unlikely outcome.

In this study, an *ad hoc* attempt was made to identify and eliminate any students who did in fact boomerang. The identification technique proceeded in this manner. The standard error of measurement for the EPS scale is 6 scale points. If the initial disparity between the student and the "teacher" is greater than $\pm$ 12 scale points, they are considered definitely different and the student is considered a potential boomerang case. (Although, again, it is most likely that he will not prove to be such a case). Based on this study (as well as the 1975 study), there appears to be a general, empirical tendency for these students to shift toward more traditional value orientations by about -2 scale points per semester. Therefore, a change of -4 scale points might be the expected attitude change for any particular student

TABLE 1.

A Summary of the Results from the 1974 Study.

TABLE 1A. N = 69



* t-test for dependent samples

TABLE 1B. N = 46

The teacher sample as a group: $\bar{X}$ = 108.6 SD = 13.2

Before Student Teaching	$\bar{X}_{diff} = 9.27$	$t_{113} = 3.55^*$	p < .0005
After Student Teaching	$\bar{X}_{diff} = 3.29$	$t_{113} = 1.57^*$	p < .07

* t-test for independent samples

TABLE 1. (cont.)

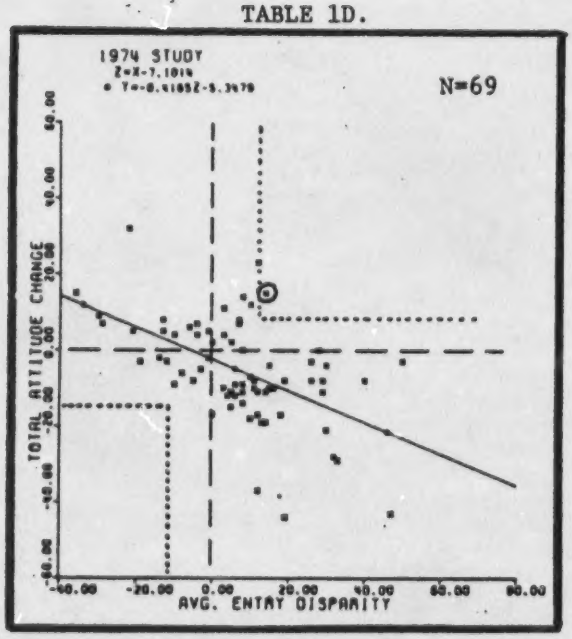
TABLE 1C.

The 1974 Intercorrelation Matrix

N = 69 R_{xy} = .232 @ p = .05

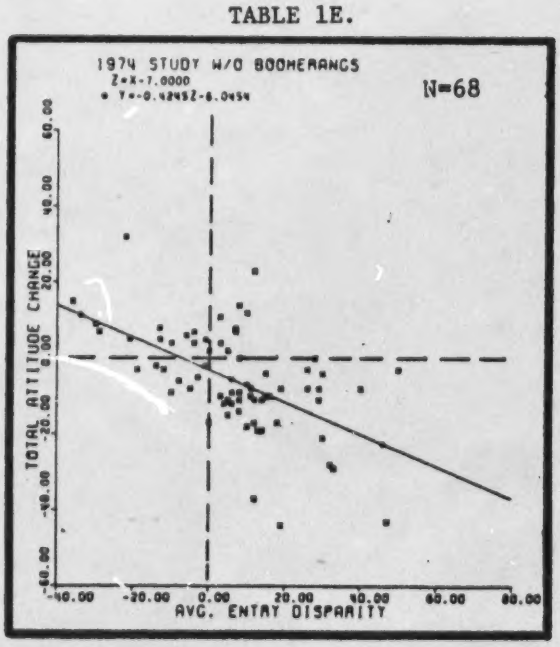
	Pre	Post	"Tchr"
Pretest	1.000		
Posttest	.494	1.000	
"Avg. Tchr"	.037	.160	1.000

TABLE 1D.



Raw Regr. Coef.	-.416
Raw Regr. Constant	-2.390
S.E. of Raw Regr. Coef.	.082
Standardized Regr. Coef.	-.525
R Squared	.276
F test for Significance	25.530
Probability Level	.0001
S.E. of Estimation	11.700

TABLE 1E.



Raw Regr. Coef.	-.425
Raw Regr. Constant	-3.070
S.E. of Raw Regr. Coef.	.081
Standardized Regr. Coef.	-.544
R Squared	.296
F test for Significance	27.730
Probability Level	.0001
S.E. of Estimation	11.400

across the 32-week program. If it should be the case that a student's attitude changed in the opposite direction to that predicted by the theory (i.e., he or she grows more "liberal" when paired with a more "conservative teacher"), by definition, the student is boomeranging. Therefore, by enforcing the requirements that a bonafide disparity does exist between student and teacher and that an opposite attitude change did occur and by allowing for the expected attitudinal shift, the following statistical identification rule emerges:

For the 1974 study:

IF: Attitude Change > 8.0 AND Entry Disparity > 12.0
OR Attitude Change < -16.0 AND Entry Disparity < -12.0

THEN: A definite boomerang has been detected.

This rule provides a useful way to identify those cases where boomerangs probably occurred. While not completely satisfactory (probabilities of teacher-student difference and of the opposite attitude change are both .67; taken jointly, the probability of boomerang detection is .44), small sample sizes and large measurement errors rule out "tighter" statistical approaches.

The "boomerang zones" are indicated in Table 1D by the dotted lines in the first and third quadrants. One student (circled, in Quadrant 1) fell within these regions. Eliminating this subject and redoing the regression resulted in Table 1E. Naturally, the regression is more significant and the effect more pronounced. These results, however, can be generalized to depict the expected outcome for most students (i.e., those not expected to boomerang) enrolled in similar student teaching programs and paired with any particular supervising "teacher."

The 1975 Study

The 1975 study was essentially similar to the 1974 study in so far as the treatment of the data is concerned. These aspects have been discussed in detail above. In this study, however, the experimental design was expanded to allow study of the attitude change effect at a semester as well as a program level.

An intermediate measurement was made for student attitudes at the end of their first student teaching semester. Table 2A reports the summary data obtained from this study.

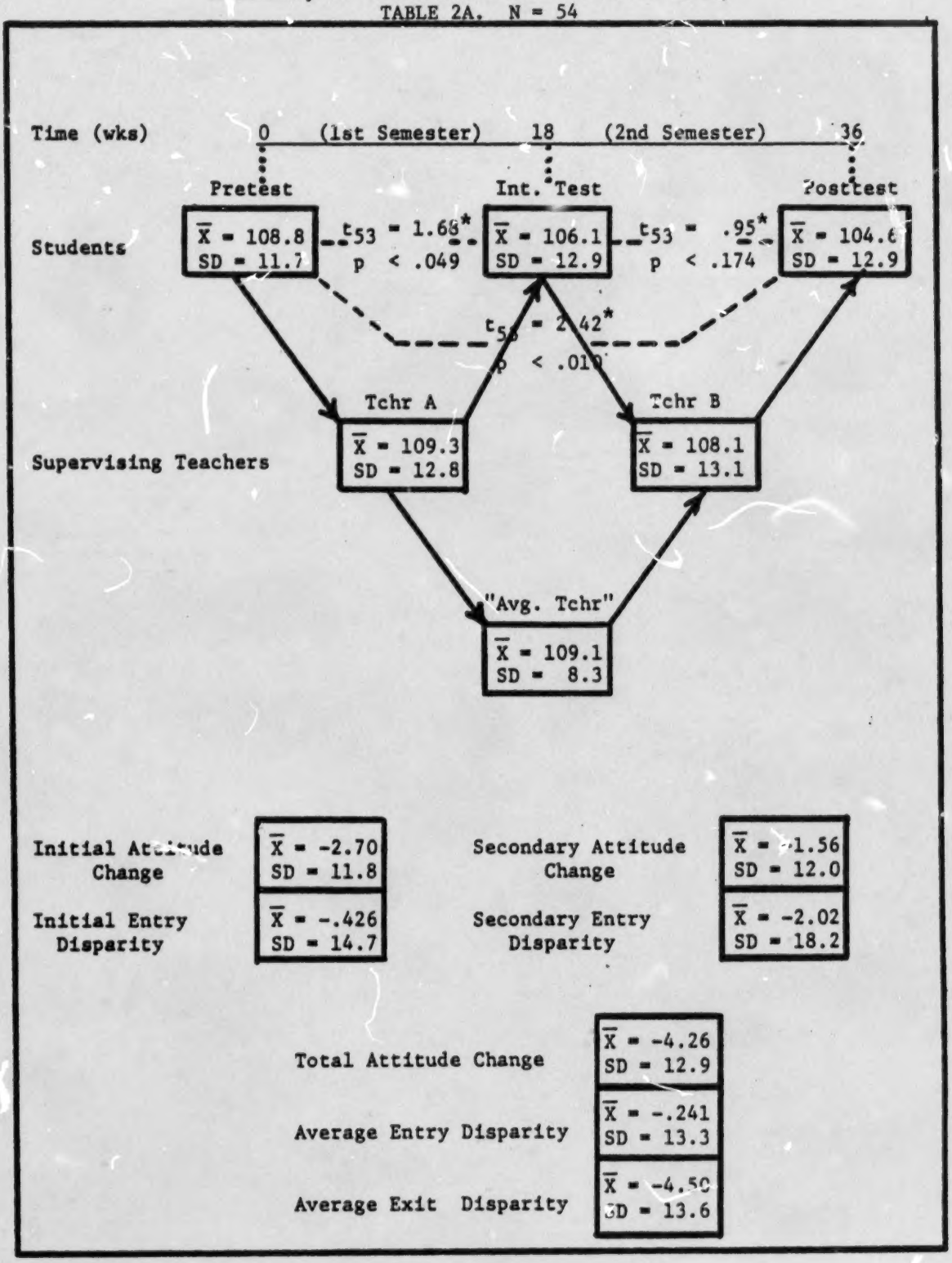
This student group began the program with orientation very similar to the teachers as a group ($p < .50$). Tables 2A and 2B show that they too experienced a group shift of about -4.26 scale points throughout the 32-week program, finishing up almost significantly different as a group from the teachers ($p < .07$). Since according to dissonance theory alone, no particular group mean attitude change should have been apparent in this situation, a more general discussion is in order.

Examination of the regression graph for total attitude change (the bottom graph in Table 2D) shows that for this group many students encountered little disparity with their "average teachers." These students experienced little attitude change. For the students who did encounter disparity, two

TABLE 2.

A Summary of the Results from the 1975 Study.

TABLE 2A. N = 54



* t-test for dependent samples

TABLE 2. (cont.)

TABLE 2B. N = 46

The teacher sample as a group:	$\bar{X}$ = 108.6	SD = 13.2	
Before Student Teaching	$\bar{X}_{diff}$ = .20	t_{98} = .08*	p < .50
In Mid-Program	$\bar{X}_{diff}$ = 2.50	t_{98} = -.96*	p < .18
After Student Teaching	$\bar{X}_{diff}$ = 4.00	t_{98} = -1.53*	p < .07

* t-test for independent samples

TABLE 2C.

The 1975 Intercorrelation Matrices

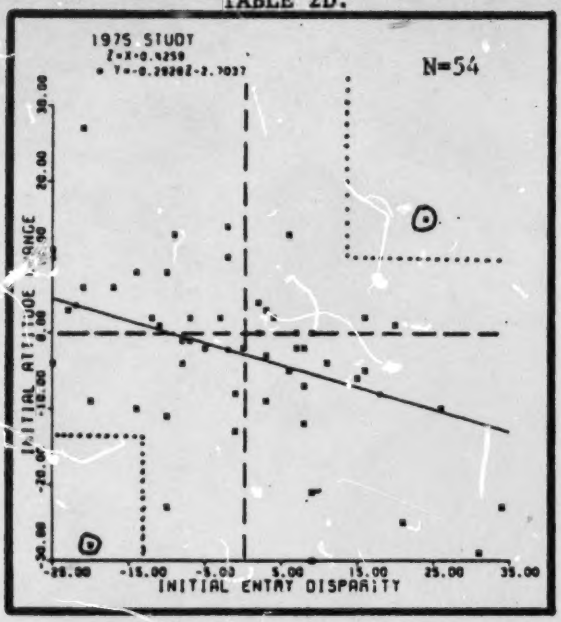
N = 54 R_{xy} = .255 @ p < .05

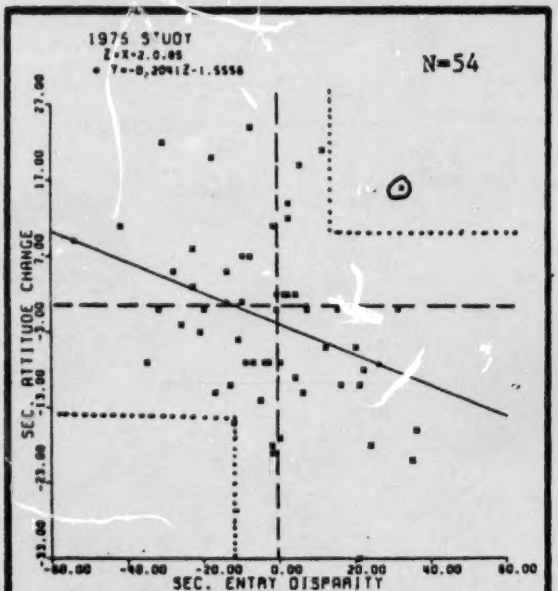
	Pre	Int	Post	TchrA	TchrB	"ATchr"
Pretest	1.000					
Int. Test	.544	1.000				
Posttest	.452	.567	1.000			
Tchr A	.289	.310	.283	1.000		
Tchr B	-.094	.019	-.006	-.190	1.000	
"Avg. Tchr"	.142	.253	.237	.618	.650	1.000

	IAC	SAC	TAC	IED	SED	AED
Init. Att. Chg.	1.000					
Sec. Att. Chg.	-.411	1.000				
Total Att. Chg.	.530	.555	1.000			
Init. Entry Disp.	-.364	-.053	-.381	1.000		
Sec. Entry Disp.	.310	-.309	-.005	.050	1.000	
Avg. Entry Disp.	-.433	-.075	-.465	.744	.576	1.000

TABLE 2. (cont.)

TABLE 2D.





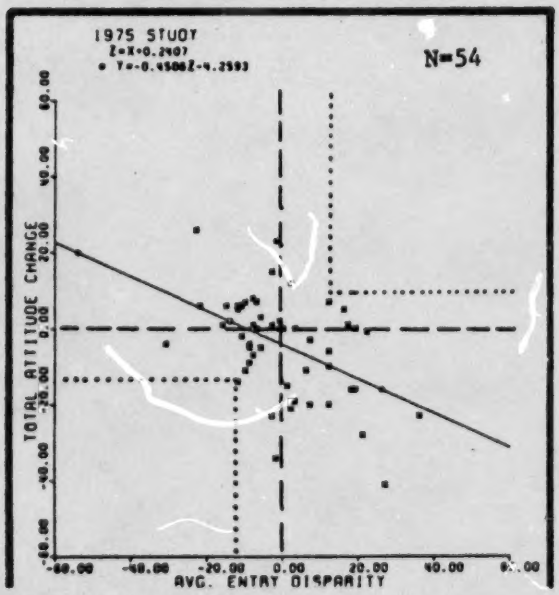
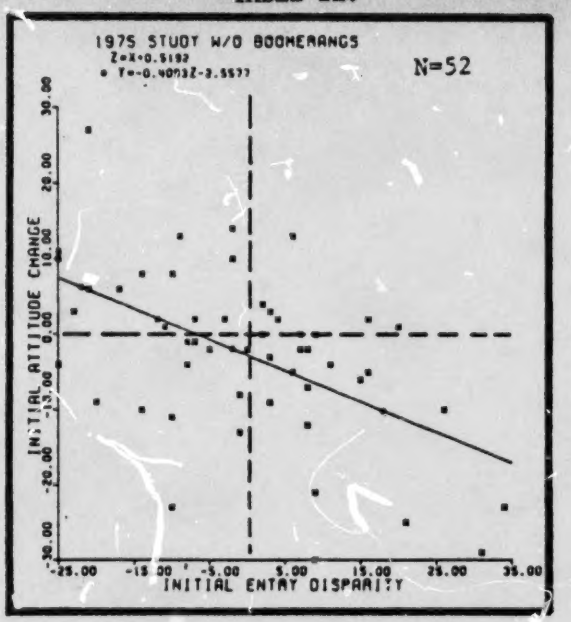
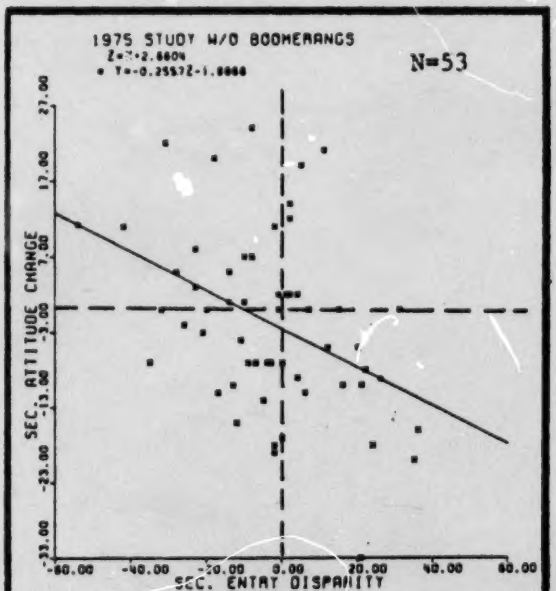


TABLE 2E.





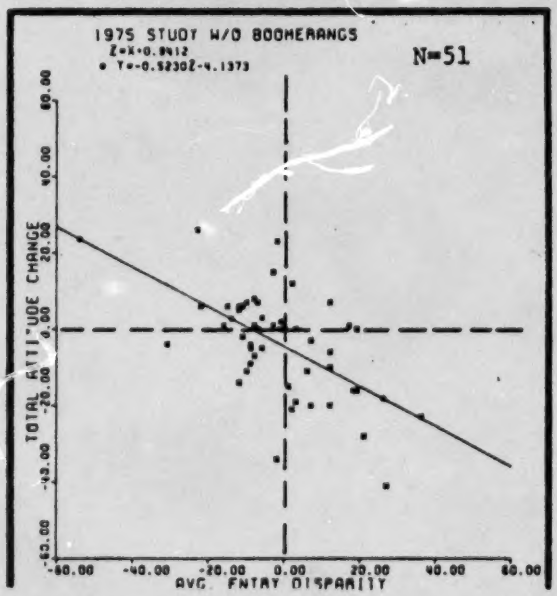


TABLE 2. (cont.)

TABLE 2D. cont.

Entire Sample

IAC vrs IED

Raw Regr. Coef.	-.293
Raw Regr. Constant	-2.830
S.E. of Raw Regr. Coef.	.104
Standardized Regr. Coef.	-.364
R Squared	.132
F test for Significance	7.920
Probability Level	.0069
S.E. of Estimation	11.100

SAC vrs SED

Raw Regr. Coef.	-.204
Raw Regr. Constant	-1.970
S.E. of Raw Regr. Coef.	.087
Standardized Regr. Coef.	-.309
R Squared	.096
F test for Significance	5.500
Probability Level	.0229
S.E. of Estimation	11.600

TAC vrs AED

Raw Regr. Coef.	-.451
Raw Regr. Constant	-4.370
S.E. of Raw Regr. Coef.	.119
Standardized Regr. Coef.	-.465
R Squared	.216
F test for Significance	14.360
Probability Level	.0004
S.E. of Estimation	11.700

TABLE 2E. cont.

Boomerangs Excluded

IAC vrs IED

Raw Regr. Coef.	-.409
Raw Regr. Constant	-2.770
S.E. of Raw Regr. Coef.	.095
Standardized Regr. Coef.	-.521
R Squared	.271
F test for Significance	18.610
Probability Level	.0001
S.E. of Estimation	9.680

SAC vrs SED

Raw Regr. Coef.	-.256
Raw Regr. Constant	-2.570
S.E. of Raw Regr. Coef.	.087
Standardized Regr. Coef.	-.382
R Squared	.146
F test for Significance	8.720
Probability Level	.0048
S.E. of Estimation	11.100

TAC vrs AED

Raw Regr. Coef.	-.523
Raw Regr. Constant	-4.630
S.E. of Raw Regr. Coef.	.119
Standardized Regr. Coef.	-.530
R Squared	.281
F test for Significance	19.170
Probability Level	.0001
S.E. of Estimation	11.100

further observations can be noted. First, there were more students who encountered positive dissonance (i.e., were more "liberal" than their "teachers") than those who experienced negative dissonance. By itself, this fact tends to account for a sample mean attitude shift (some students - no disparity, no shift; most others - some positive disparity, a negative shift; thus as a group a slight negative shift occurs). Second, apparently when students encounter the same amount of positive or negative dissonance, more attitude change accompanies the positive difference than the negative. That is to say that students shift toward traditional values a bit easier than they do toward liberal ones. This effect is also apparent, in retrospect, in Tables 1D and 1E depicting the 1974 study. If, in all cases, two regressions had been performed -- one in the region where entry disparity is greater than zero and one where it is less than zero -- then the former would exhibit the greatest slope. Together these two observations offer a satisfactory interpretation of the group effect in the 1975 study.

In general, the group effect was somewhat less apparent during the second semester. From Table 2C, it is noted that initially a significant correlation existed between the students' value orientations and those of their first teachers (Teacher A). At the end of the first semester this correlation had further increased. At the start of the second semester, however, pairings with their second teachers (Teacher B) were essentially random. This produced a more even distribution of entry disparities and subsequent attitude changes. Little change had occurred in this configuration by the end of the second semester. The random assignment decreases the likelihood that attitude change will occur asymetrically in the sample. Thus, since in both cases the student group and teacher group were not appreciably different, a significant group attitude was not apparent in the second semester (Table 2A), a result fully in accord with dissonance theory.

The result of regression analysis for this study compares favorably with that of the 1974 study. Table 2D reports these findings for each semester as well as for the program. The explanation of the table is similar to that for Table 1D. The reader is cautioned to notice the differences in scale for the several graphs.

The previous argument was used to identify and eliminate boomerang cases. The rule was applied on a semester basis with an expected subject attitude shift of -2.0 scale points. The rule then becomes:

For each semester of the 1975 study:

IF: Attitude Change > 10.0 AND Entry Disparity > 12.0
OR Attitude Change < -14.0 AND Entry Disparity < -12.0

THEN: A boomerang has been detected.

Using this rule, two instances were found during the first semester and one during the second. Table 2E depicts the results with these persons eliminated from the study. For the program graph, all three persons were removed from the sample.

The Composite Study

The 1975 Study replicated in all respects the study done in 1974. Combining the comparable data from each study and repeating the identical analysis resulted in the information contained in Table 3.

On the whole, the teachers as a group were initially more traditional than were the students ($p < .013$). After 32 weeks of student teaching, there was virtually no difference ($p < .43$), the student group having experienced a highly significant attitude change ($p < .001$). From Table 3C, it is apparent that in general students were randomly assigned to "average teachers."

Tables 3D and 3E give the data for the two regressions, one with and one without boomerangs. The combined sample provides enough cases to effectively illustrate the relationship between attitude change and entry disparity.

Discussion

The two studies presented above, taken separately or jointly, are intended to document the effects which student teaching experiences may have upon the educational value orientations of preservice teachers. There seems little doubt that the supervising teachers' values and attitudes, expressed vocally and/or concretely presented in their professional conduct, exercise a powerful influence upon the orientations of their student teachers. If programs of professional pedagogy are to be fully successful, the designers must fully understand the nature of this influence.

Cognitive dissonance theory provides a conceptual model that allows formal discussion of attitude change effects in the student teaching situation. If a perceived disparity exists between the student and the teacher, the student will tend to adjust his value orientation in such a way as to minimize that disparity. The extent of this adaptive shift is expected to be a function of the duration of the situation.

Empirical evidence has been presented in this report to validate the predictability and general usefulness of the dissonance model. Using the Educational Preference Scale as a normative and numerical reference, the attitude change--entry disparity relationship operating during a 32-week cluster student teaching program--was quantitatively described by the following equation (Table 3D):

Total Attitude Change = -.438 (Average Entry Disparity) -3.42

It was found that this effect operated in a relatively consistent and independent manner during both semesters of the program; the students shifted first toward their first supervising teacher and then toward their second.

In the 1975 study, two additional aspects of the student teaching experience were briefly explored. It was thought that student satisfaction with their field experiences might be related to attitude change. PSTO scores were correlated with all other variables and were found to be significantly related only to total attitude change ($R = .28$, $p < .02$) and to posttest EPS scores ($R = .22$, $p < .05$). Students who experienced a positive attitude change (became more "emergent") and students who in fact were more liberal when they exited the program tended to be more satisfied with their experiences.

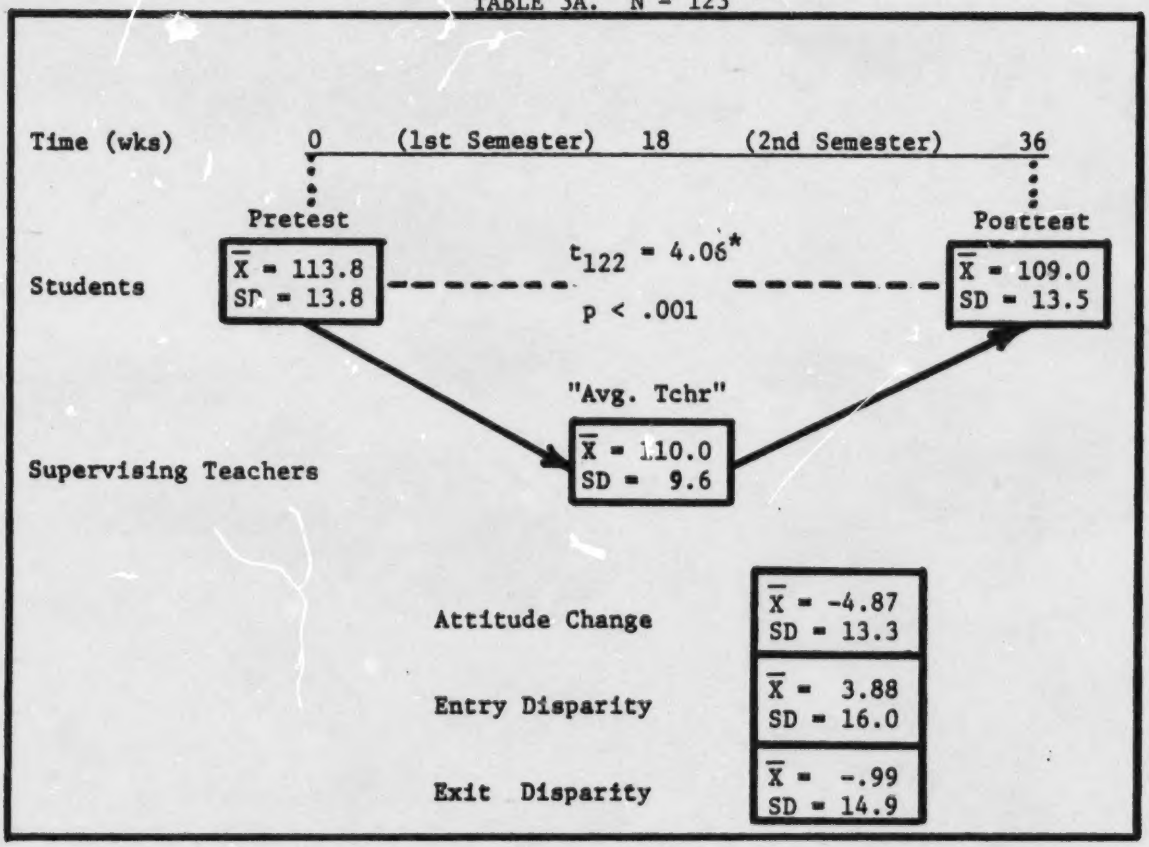
The second question touched upon concerned supervising teacher effectiveness. No correlation was found between the educational orientations of the teachers (EPS scores) and the degree to which students perceived them to be effective (MESRD scores). Both liberal and conservative teachers were frequently nominated as "most effective."

These effects could have been more extensively explored within the confines of this study. In order to produce the classical cognitive dissonance reduction effect, there must be other powerful motivating factors present besides simply the existence of an attitudinal disparity. Measures of professional respect, for instance, such as overall satisfaction and perceived effectiveness should go a long way towards clearing up the regression (i.e., what regression emerges when only those students who were satisfied and who were paired with effective teachers are considered). Unfortunately due to time and small sample sizes, these avenues were not explored in this study.

TABLE 3.

A Summary of the Results from the Composite Study.

TABLE 3A. N = 123



* t-test for dependent samples

TABLE 3B. N = 46

The teacher sample as a group: $\bar{X}$ = 108.6 SD = 13.2			
Before Student Teaching	$\bar{X}_{diff}$ = 5.30	$t_{167} = 2.25^*$	p < .013
After Student Teaching	$\bar{X}_{diff}$ = .40	$t_{167} = .172^*$	p < .43

* t-test for independent samples

TABLE 3. (cont.)

TABLE 3C.

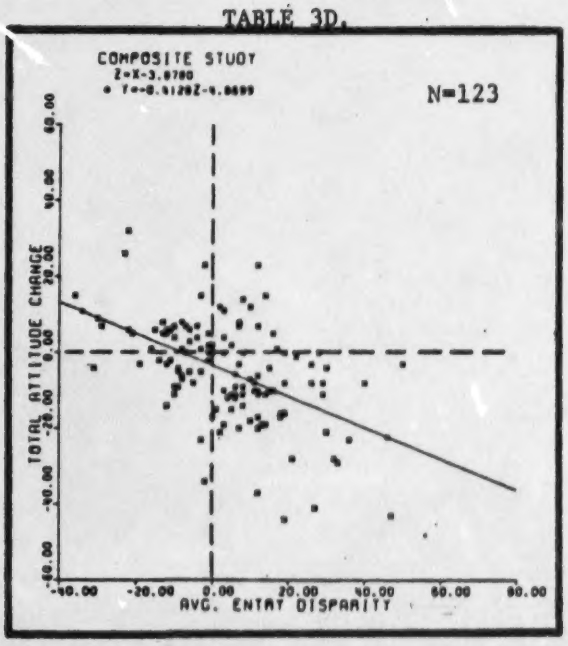
(C)

The Composite Intercorrelation Matrix

N = 123 R_{xy} = .195 @ p < .05

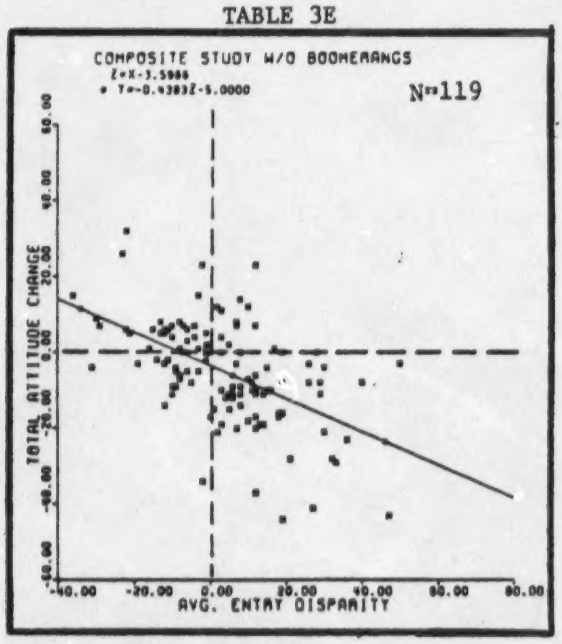
	Pre	Post	"Tchr"
Pretest	1.000		
Posttest	.525	1.000	
"Avg. Tchr"	.097	.205	1.000

TABLE 3D.



Raw Regr. Coef.	-.413
Raw Regr. Constant	-3.270
S.E. of Raw Regr. Coef.	.066
Standardized Regr. Coef.	-.497
R Squared	.247
F test for Significance	39.630
Probability Level	.0001
S.E. of Estimation	11.600

TABLE 3E



Raw Regr. Coef.	-.438
Raw Regr. Constant	-3.420
S.E. of Raw Regr. Coef.	.064
Standardized Regr. Coef.	-.532
R Squared	.284
F test for Significance	46.300
Probability Level	.0001
S.E. of Estimation	11.300

A final point of discussion concerns any attitudinal change on the part of the supervising teacher as a result of interaction with the students. In both studies the assumption has been that the teacher experiences relatively little if any change. Being older, with more training and experience, he or she may well view the student-and-teacher relationship as a "teacher-learner" situation, particularly since this is a large portion of the role. The attitudinal change interaction is thus being assumed analogous to the mutual gravitational interaction of the earth and a satellite, i.e., both are affected by each other but one to an enormously more significant degree.

References

Bentley, R.R. and Price, J. "Purdue Student Teacher Opinionaire." Purdue Measurements and Evaluation Instruments, Purdue Research Foundation, Purdue University, Lafayette, Indiana.

Cole, H.P. Process Education. Englewood Cliffs, New Jersey: Educational Technology Publications, 1972.

Cummins, R.R. "Role Study in Teacher Training: A Sequel." Journal of Educational Sociology, vol. 35 (November, 1961), pp. 119-120.

Festinger, L. A Theory of Cognitive Dissonance. Evanston, Illinois: Row and Peterson, 1957.

Getzels, J.W. "Conflict and Role Behavior in the Educational Setting," in Charters, W.W. Jr. and Gage, N.L. (eds.) Readings in the Social Psychology of Education. Boston: Allyn and Bacon, 1963.

Guba, E., Jackson, P. and Bidwell, C. "Occupational Choice and the Teaching Career." Educational Research Bulletin, vol. 38 (January, 1959), pp. 1-12.

Holemon, R.L. "Attitude Change of the Student Teacher: A Test of the ABX Model." Unpublished doctoral dissertation. St. Louis: Washington University, 1963.

Lacefield, W.E. and Cole, H.P. "Starting Point for Curricular Change: A Predisposition and Suitability Measure for Client Groups." Paper presented at the annual meeting of the American Educational Research Association, New Orleans, Louisiana, February, 1973.

Lord, F.M. and Novick, M.R. Statistical Theories of Mental Test Scores. Reading, Massachusetts: Addison-Wesley, 1968, p. 204.

Loree, M.R. "Shaping Teachers' Attitudes." Research in Teacher Education: A Symposium. Edited by B.O. Smith. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971.

Milner, E.J., ed. The Supervising Teacher. Thirty-Eight Yearbook of the Association for Student Teaching (Association for Teacher Educators). Dubuque, Iowa: Wm. C. Brown, Inc., 1959.

Murad, B.J. "A Study of the Effects of a Teacher Education Program on Dimensions of Teacher Trainees' Professional Ideology, Attitudes and Values." Unpublished doctoral dissertation, Lexington: University of Kentucky, 1974.

Oestreich, A. "Professional Growth of the Student Teacher." Phi Delta Kappan, vol. 55 (January, 1974).

Price, R.D. "The Influence of Supervising Teachers." Journal of Teacher Education, vol. 12 (December, 1961), pp. 471-475.

Roberts, R.A. "The Relationship between Change in Pupil Control Ideology and Student Teachers' Perceptions of Cooperating Teacher-Pupil Control Ideology." Unpublished doctoral dissertation. Stillwater: Oklahoma State University, 1969.

Spindler, G. "Education in a Transforming American Culture." Harvard Educational Review, vol. 25 (Summer, 1955), pp. 145-156.

Steeves, F.L. "A Summary of the Literature on the Off-Campus Cooperating Teacher." Educational Administration and Supervision, vol. 38 (March, 1952), pp. 129-137.

Stoller, N. "Television for Education." Change in Teacher Education: An Appraisal. Washington, D.C.: National Education Association, 1964.

Walberg, H.J. "Self-Conception in Beginning Teachers." Journal of Teacher Education, vol. 17 (Summer, 1966), p. 254.

Walberg, H.J. "Professional Role Discontinuities in Educational Careers." Review of Educational Research, vol. 40 (June, 1970), pp. 409-420.

Willower, D.J., Eidell, T.L. and Hoy, W.K. The School and Pupil Control Ideology. Pennsylvania State University Studies (No. 24 revised) University Park: Pennsylvania State University, 1973.

Yee, A.H. "Do Cooperating Teachers Influence the Attitudes of Student Teachers?" Journal of Educational Psychology, vol. 60 (August, 1969), pp. 327-332.